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EXAMINER

THANGAVELU, KANDASAMY

ART UNIT

PAPER NUMBER

2123

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/580,700

Applicant(s)

SWIFT, LARRY

Examiner

Kandasamy Thangavelu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Introduction

1. Claims 1-41 of the application have been examined.

Domestic Priority not Granted

2. This application contains a claim for the benefit of priority based on U.S. Provisional Application No. 60/182,346 filed on February 24. Provisional Application 60/182,346 has been reviewed and priority denied, because the Provisional Application 60/182,346 fails to satisfy the requirements of 35 U.S.C section 112, first paragraph, as described below:

The provisional application does not define report period and does not show how the summary period is related to the data shown in port trend analysis report. The volumes of data at different percentage ranges are shown, but what are those percentages, how the data is collected and how it is related to the percentage of port speed are not explained. The relationship between burst range defaults percentage and port speed percentage is also not explained. An algorithm for selecting recommended port speed is described. It uses a linear regression model. However, it does not describe which data is used to develop the trend location using the linear regression model. One of ordinary skill in the art would require undue experimentation

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to arrive at the material claimed in the invention from the material disclosed in the provisional application. See 35 U.S.C 119 (e) (1).

Drawings

3. The drawings submitted on May 30, 2000 are accepted.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 24 to 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 24, 25, 30 and 33 recite the limitation "The system of Claim 23" in Line 1 of the claims. There is insufficient antecedent basis for this limitation in the claims. Claim 23 refers to "A method for determining and predicting performance of a communication device" and not a system.

Claims 26, 27, 28, 29, 31 and 32 recite the limitation "The system of Claim ..." in Line 1 of the claims. There is insufficient antecedent basis for this limitation in the claims. The base claim of these claims incorrectly refers to "The system of Claim 23".

Claim Interpretations

6. In Claims 24, 25, 30 and 33, the limitation "The system of Claim 23" in Line 1 of the claim has been interpreted as "The method of Claim 23".

In Claims 26, 27, 28, 29, 31 and 32, the limitation "The system of Claim ..." in Line 1 of the claim has been interpreted as "The method of Claim ...".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

CWZ

~~A person shall be entitled to a patent unless—~~

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

8. Claims 1, 2, 8-10, 12, 13, 19-21, 23, 24, 30-32 and 34-41 are rejected under 35

U.S.C. 102(e) as being anticipated by **Engel et al. (EN)** (U.S. Patent 6,320,585).

8.1 **EN** teaches Displaying resource performance and utilization information. Specifically, as per Claim 1, **EN** teaches a system for determining and predicting performance of a communication device (CL1, L54 to CL2, L5; CL2, L14-29; CL9, L5-6); comprising:

means for specifying a report period, the report period corresponding to a reporting period of interest (CL2, L14-29; CL8, L20-23);

means for specifying a plurality of summary periods, each summary period corresponding to a portion of the reporting period (CL1, L54 to CL2, L5; CL8, L22-34);

means for processing a retrieved plurality of selected data parameters into a plurality of performance parameters corresponding to actual performance of the communication device during each of the summary periods (CL1, L54 to CL2, L5; CL2, L32-36; Fig. 2; CL8, L22-34); and a plurality of trend parameters to predict future performance of the communication device (CL9, L5-6; CL9, L16-54; Fig. 11); and

means for presenting and displaying the plurality of performance parameters and the plurality of trend parameters in a trend report (CL1, L54 to CL2, L5; CL2, L27-29; CL6, L22-36; CL8, L47-57).

Per Claim 2: EN teaches a means for recommending a performance rating based upon the plurality of trend parameters (CL2, L21-29; Fig. 11).

Per Claim 8: EN teaches that the processing means determines the plurality of trend parameters using a statistical regression algorithm (CL9, L26-54; Fig. 11).

Per Claim 9: EN teaches that the statistical regression algorithm is a linear regression algorithm (CL9, L26-54; Fig. 11).

Per Claim 10: EN teaches that the processing means further process the plurality of trend parameters to predict the time at which capacity of the communication device should be changed (CL2, L21-29; Fig. 11; Fig. 10).

8.2 As per Claim 12, EN teaches a system for determining and predicting performance of a communication device (CL1, L54 to CL2, L5; CL2, L14-29; CL9, L5-6); comprising:

a data poller, wherein the data poller collects a plurality of data parameters from the communication device (CL8, L22-25);

a database which stores the data parameters (CL8, L25-34);

a user interface, wherein a user specifies a report period, the report period corresponding to a reporting period of interest (CL2, L14-29; CL8, L20-23); and the user specifies a plurality of summary periods, each summary period corresponding to a portion of the reporting period (CL1, L54 to CL2, L5; CL8, L22-34);

a processor, wherein the processor retrieves a plurality of selected data parameters from the database such that the plurality of selected data parameters corresponds to the plurality of summary periods (CL8, L25-34; CL8, L37-38; CL8, L47-58); and wherein the processor processes the plurality of selected data parameters into a plurality of performance parameters which correspond to actual performance of the communication device during each of the summary periods (CL1, L54 to CL2, L5; CL2, L32-36; Fig. 2; CL8, L22-34); and wherein the processor trends the plurality of performance parameters into a plurality of trend parameters to predict future performance of the communication device (CL9, L5-6; CL9, L16-54; Fig. 11);

a data presentation module, the module presents the plurality of processed performance parameters and the plurality of trend parameters in a trend report (CL1, L54 to CL2, L5; CL2, L27-29; CL6, L22-36; CL8, L47-57); and

a graphical user interface which displays the trend report (Fig. 2; CL2, L2-5).

Per Claims 13 and 19-21, these are rejected based on the same reasoning as Claims 2 and 8-10, as shown above. Claims 13 and 19-21 are system claims reciting the same limitations as Claims 2 and 8-10, using the processor as the means.

8.3 As per Claim 23, it is a method claim based on Claim 1, reciting all the limitations of Claim 1 and in addition specifying the limitation:

collecting a plurality of data parameters from the communication device.

EN teaches collecting a plurality of data parameters from the communication device (CL8, L22-25). EN teaches all other limitations as indicated in Paragraph 10.1 above.

Per Claims 24 and 30-32, these are rejected based on the same reasoning as Claims 2 and 8-10, as shown above. Claims 13 and 19-21 are method claims reciting the same limitations as Claims 2 and 8-10, as taught through out by EN.

8.4 As per Claim 34, it is a computer medium claim based on Claim 12, reciting all the limitations of Claim 12 except the following limitations of claim 12:

a data poller, wherein the data poller collects a plurality of data parameters from the communication device; and

a database which stores the data parameters.

EN teaches all the limitations of this claim as indicated in Paragraph 10.2 above. The limitations not included in this claim are inherent in the claim.

Per Claim 35, this is rejected based on the same reasoning as Claim 2, as shown above. Claim 35 is a computer medium claim reciting the same limitation as Claim 2, as taught through out by EN.

8.5 As per Claim 36, EN teaches a method for determining and predicting; performance of a communication device (CL1, L54 to CL2, L5; CL2, L14-29; CL9, L5-6); the method comprising the steps of:

retrieving a plurality of selected data parameters from a communication device, such that the plurality of selected data parameters corresponds to a plurality of summary periods (CL8, L22-25);

processing the plurality of selected data parameters into a plurality of performance parameters corresponding to actual performance of the communication device during each of the summary periods (CL1, L54 to CL2, L5; CL2, L32-36; Fig. 2; CL8, L22-34);

trending the plurality of performance parameters into a plurality of trend parameters to predict future performance of the communication device (CL9, L5-6; CL9, L16-54; Fig. 11); and

recommending a performance rating based upon the trend parameters (CL2, L21-29; Fig. 11).

8.6 As per Claim 37, EN teaches a system for determining and predicting performance of a communication device (CL1, L54 to CL2, L5; CL2, L14-29; CL9, L5-6); comprising:

a user interface, wherein a user specifies a report period, the report period corresponding to a reporting period of interest (CL2, L14-29; CL8, L20-23); and the user specifies a plurality of summary periods, each summary period corresponding to a portion of the reporting period (CL1, L54 to CL2, L5; CL8, L22-34); and

a processor, wherein the processor detects a plurality of selected data parameters from the communications device such that the plurality of selected data parameters corresponds to the plurality of summary periods (CL8, L25-34; CL8, L37-38; CL8, L47-58); and wherein the processor processes the plurality of selected data parameters into a plurality of performance parameters which correspond to actual performance of the communication device during each of the summary periods (CL9, L5-6; CL9, L16-54; Fig. 11); and wherein the processor trends the plurality of performance parameters into a plurality of trend parameters to predict future performance of the communication device (CL9, L5-6; CL9, L16-54; Fig. 11); and wherein the processor recommends a performance rating based upon the plurality of trend parameters (CL2, L21-29; Fig. 11).

8.7 As per Claim 38, it is a system claim based on Claim 13 (when claim 12 limitations are read into claim 13), reciting all the limitations of Claim 13.

This claim uses “means for” for specifying the components of the system, while Claim 12 lists the individual components. EN teaches all the limitations of this claim as indicated in Paragraph 10.2 above.

8.8 As per Claim 39, it is a method claim based on Claim 38.

This claim uses “means for” for specifying the components of the system, while Claim 12 lists the individual components. EN teaches all the limitations of this claim as indicated in Paragraph 10.2 above.

8.9 As per Claim 40, EN teaches a transmitter (Fig. 1); comprising:

a user interface, wherein a user specifies a report period, the report period corresponding to a reporting period of interest (CL2, L14-29; CL8, L20-23); and the user specifies a plurality of summary periods, each summary period corresponding to a portion of the reporting period (CL1, L54 to CL2, L5; CL8, L22-34);

a processor, wherein the processor retrieves a plurality of selected data parameters from the database such that the plurality of selected data parameters corresponds to the plurality of summary periods (CL8, L25-34; CL8, L37-38; CL8, L47-58); and wherein the processor processes the plurality of selected data parameters into a plurality of performance parameters which correspond to actual performance of the communication device during each of the summary periods (CL1, L54 to CL2, L5; CL2, L32-36; Fig. 2; CL8, L22-34); and wherein the processor trends the plurality of performance parameters into a plurality of trend parameters to predict future performance of the communication device (CL9, L5-6; CL9, L16-54; Fig. 11);

and wherein the processor recommends a performance rating based upon the plurality of trend parameters (CL2, L21-29; Fig. 11); and

a data presentation module, the module presents the plurality of processed performance parameters and the plurality of trend parameters in a trend report (CL1, L54 to CL2, L5; CL2, L27-29; CL6, L22-36; CL8, L47-57).

8.10 As per Claim 41, it is a device claim for the receiver having the same limitations as Claim 40, a device claim for the transmitter. EN teaches all the limitations of this claim as indicated in Paragraph 10.9 above.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 3-6, 14-17 and 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Engel et al. (EN)** (U.S. Patent 6,320,585) in view of **Hassell et al. (HA)** (U.S. Patent application 2002/0018473).

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11.1 As per Claims 3-5, **EN** teaches the system of Claim 1. **EN** does not expressly teach per claim 3, that at least one of the plurality of data parameters is a burst statistic; per claim 4, a means for specifying the number of the plurality of burst ranges; and per claim 5, a means for specifying the percentage range for each one of the plurality of burst ranges.

HA teaches that at least one of the plurality of data parameters is a burst statistic (Para 0003; Para 0022-0024); a means for specifying the number of the plurality of burst ranges (Para 0058); and a means for specifying the percentage range for each one of the plurality of burst ranges (Para 0058). **HA** specifies the motivation for doing so are that the information on the size and extent of traffic bursts above CIR is extremely useful to determine how often the user exceeds the CI (Para 0018); each time a burst occurs in a given burst range, a counter increments, thus keeping a count of the number of occurrences in that rang (Para 0061); and the information is graphically presented to the user (Para 0066).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the system of **EN** with the system of **HA** that included at least one of the plurality of data parameters as a burst statistic; a means for specifying the number of the plurality of burst ranges; and a means for specifying the percentage range for each one of the plurality of burst ranges, as the information on the size and extent of traffic bursts above CIR would be extremely useful to determine how often the user exceeds the CIR; each time a burst occurs in a given burst range, a counter could be incremented, thus keeping a count of the number of occurrences in that range; and the information could be graphically presented to the user.

11.2 As per Claim 6, **EN** and **HA** teach the system of Claim 3. **EN** teaches that the processing means further comprises bandwidth utilization trending means which predicts future performance of the communication device relative to each bandwidth utilization range (CL9, L5-6; CL9, L16-54; Fig. 11), as that facilitates prediction of a time to reach a threshold number for bandwidth utilization (CL2, L 22-29). **EN** does not expressly teach the processing means further comprises a burst range trending means which predicts future performance of the communication device relative to each burst range.

HA teaches that at least one of the plurality of data parameters is a burst statistic (Para 0003; Para 0022-0024); a means for specifying the number of the plurality of burst ranges (Para 0058); and a means for specifying the percentage range for each one of the plurality of burst ranges (Para 0058). **HA** specifies the motivation for doing so are that the information on the size and extent of traffic bursts above CIR is extremely useful to determine how often the user exceeds the CI (Para 0018); each time a burst occurs in a given burst range, a counter increments, thus keeping a count of the number of occurrences in that rang (Para 0061); and the information is graphically presented to the user (Para 0066).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to combine the system of **EN** with the system of **HA** that included the processing means further comprising a burst range trending means which predicts future performance of the communication device relative to each burst range, as that would facilitate prediction of a time to reach a threshold number for each burst range and the information on the size and extent of traffic bursts above CIR would be extremely useful to determine when the user would exceed the CIR and the information could be graphically presented to the user.

Per Claims 14-17 and 25-28, these are rejected based on the same reasoning as Claims 3-6 as shown above. Claims 14-17 and 25-28 are system and method claims reciting the same limitations as Claims 3-6, as taught through out by **EN** and **HA**.

12. Claims 7, 18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Engel et al. (EN)** (U.S. Patent 6,320,585) in view of **Hassell et al. (HA)** (U.S. Patent application 2002/0018473), and further in view of **VanDervort (VA)** (U.S. Patent 5,699,346).

12.1 As per Claim 7, **EN** and **HA** teach the system of Claim 6. **EN** and **HA** do not expressly teach that at least one of the plurality of burst ranges is a total burst range corresponding to the total number of all bits transmitted during each of the plurality of summary periods. **VA** teaches that at least one of the plurality of burst ranges is a total burst range corresponding to the total number of all bits transmitted during each of the plurality of summary periods (CL4, L50 to CL5, L4), as that enables the service provider to determine that the user properly subscribed his virtual connection and to determine how much network throughput can be sold to the subscribers (CL4, L50-62).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the system of **EN** and **HA** with the system of **VA** that included at least one of the plurality of burst ranges being a total burst range corresponding to the total number of all bits transmitted during each of the plurality of summary periods, as that would enable the service

provider to determine that the user properly subscribed his virtual connection and to determine how much network throughput could be sold to the subscribers.

Per Claims 18 and 29, these are rejected based on the same reasoning as Claim 7 as shown above. Claims 18 and 29 are system and method claims reciting the same limitations as Claim 7, as taught through out by **EN**, **HA** and **VA**.

13. Claims 11, 22 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Engel et al. (EN)** (U.S. Patent 6,320,585) in view of **Colmant et al. (CO)** (U.S. Patent 6,144,662).

13.1 As per Claim 11, **EN** teaches the system of Claim 1. **EN** does not expressly teach that the performance rating corresponds to a port speed of a port residing in the communications device, wherein the port speed corresponds to the rate at which data is transmitted through the port. **CO** teaches that the performance rating corresponds to a port speed of a port residing in the communications device, wherein the port speed corresponds to the rate at which data is transmitted through the port (CL4, L10-12; CL1, L48), as high port speed provides a high packet throughput (CL2, L32).

It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the system of **EN** with the system of **CO** that included the performance rating corresponding to a port speed of a port residing in the communications device, wherein the

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port speed corresponded to the rate at which data would be transmitted through the port, as high port speed would provide a high packet throughput.

Per Claims 22 and 33, these are rejected based on the same reasoning as Claim 11 as shown above. Claims 22 and 33 are system and method claims reciting the same limitations as Claim 11, as taught through out by **EN, HA** and **VA**.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to the Applicants' disclosure.

The following patents and papers are cited to further show the state of the art at the time of Applicant's invention with respect to collecting data and predicting performance of the communication systems using burst ranges.

1. Ennis, Jr. et al., "Method and apparatus for measurement of peak throughput in packetized data networks", U.S. Patent 5,867,483, February 1999.
2. Sarangapani et al., "Method and apparatus for predicting a fault condition", U.S. Patent 5,950,147, September 1999.
3. Alvarez et al., "Dynamically variable priority, variable position channels in a TDMA burst", U.S. Patent 4,330,857, May 1982.
4. Chien et al., "Dynamic resource allocation for self-similar traffic in ATM network", IEEE 1999.

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5. Adas, "Using Adaptive linear prediction to support real time VBR video under RCBP network service model", IEEE 1998.
 6. Tsingotjidis et al., "Estimation and prediction approach to congestion control in ATM networks", IEEE 1994.
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-746-7329.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
July 29, 2003

CEVR
W. Thangavelu
Art. 2123
Patent Examiner